

WEST Search History

DATE: Wednesday, October 23, 2002

Set Name **Query**
side by side

Hit Count **Set Name**
result set

DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ

L3 L2 same l1

12 L3

L2 sugar beet same (((corn or wheat or rye or oat or rice) adj bran) or
apple)

916 L2

L1 arabinose

8870 L1

END OF SEARCH HISTORY

(FILE 'HOME' ENTERED AT 13:38:15 ON 23 OCT 2002)

FILE 'AGRICOLA, ALUMINIUM, ANABSTR, AQUIRE, BABS, BIOCOMMERCE, BIOTECHNO,
CABA, CAOLD, CAPLUS, CBNB, CEABA-VTB, CEN, CERAB, CIN, COMPENDEX,
CONFSCI, COPPERLIT, CORROSION, DKILIT, ENCOMPLIT, ENCOMPLIT2, FEDRIP,
GENBANK, INSPEC, INSPHYS, INVESTEXT, IPA, ...' ENTERED AT 13:38:33 ON 23
OCT 2002

L1 29853 S ARABINOSE
L2 98 S L1 AND (SUGAR BEET AND (APPLE OR RICE OR CORN OR WHEAT))
L3 31 S L2 AND HYDROLYSIS
L4 7 S L3 AND ACID HYDROLYSIS

cellulose, except for **wheat** bran which is a highly lignified plant cell wall material.

L4 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1993:143513 CAPLUS

DOCUMENT NUMBER: 118:143513

TITLE: Studies of the length of homogalacturonic regions in pectins by **acid hydrolysis**

AUTHOR(S): Thibault, Jean Francois; Renard, Catherine M. G. C.; Axelos, Monique A. V.; Roger, Philippe; Crepeau, Marie Jeanne

CORPORATE SOURCE: Cent. Rech. Agro-Aliment, Inst. Natl. Rech. Agron., Nantes, F-44026, Fr.

SOURCE: Carbohydrate Research (1993), 238, 271-86

CODEN: CRBRAT; ISSN: 0008-6215

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The different susceptibilities to **acid hydrolysis** of the glycosidic linkages in a pectin backbone were used to isolate fractions corresponding to the smooth, homo-D-galacturonic regions. Pectins from **apple**, beet, and citrus were de-esterified, and the resulting pectic acids were hydrolyzed in 0.1 M HCl at 80.degree.C for up to 72 h. The intrinsic viscosities of the hydrolyzates decreased, and two stages could be distinguished. Up to 10 h, there was a fast decrease, corresponding to the cleavage of the more susceptible linkages between L-rhamnose and galacturonic acid residues, followed by a slower stage, corresponding to cleavage of the linkages between galacturonic acid residues. During the course of the reaction, some galacturonic acid and most of the neutral sugars were solubilized, giving two fractions on Sepharose CL-6B. A minor fraction, composed mostly of galacturonic acid and rhamnose, with rhamnose-galacturonic acid ratios of 1:1.5, 1:2.9, and 1:2.1 for **apple**, beet, and citrus, resp., eluted at K_{av} 0.8, and a major fraction, composed essentially of L-**arabinose** and D-galactose, eluted at the total vol. The acid-insol. materials represented 84, 66, and 90% of the original pectic acids for **apple**, beet, and citrus, resp. They were progressively freed of neutral sugars; after **hydrolysis** for 72 h, almost pure polygalacturonates (more than 98 mol% galacturonic acid), representing the homogalacturonic regions, were obtained. The mol. wts. of these 72-h acid-insol. materials from **apple**, beet, and citrus were similar (resp., 21 000, 19 000, and 24 000), corresponding to lengths of the homogalacturonic regions estd. to be a min. of 72-100 galacturonic acid residues.

L4 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:627356 CAPLUS

DOCUMENT NUMBER: 113:227356

TITLE: Assessment of methanolysis for the determination of sugars in pectins

AUTHOR(S): Quemener, Bernard; Thibault, Jean Francois

CORPORATE SOURCE: Cent. Rech. Agro-Aliment., Inst. Natl. Rech. Agron., Nantes, F-44026, Fr.

SOURCE: Carbohydrate Research (1990), 206(2), 277-87

CODEN: CRBRAT; ISSN: 0008-6215

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A procedure for the detn. of galacturonic acid and the main neutral sugars in pectins involves enzymic **hydrolysis** followed by methanolysis and HPLC. The usefulness of this method was demonstrated by comparison of the results obtained by (1) methanolysis in methanolic M HCl without enzymic prehydrolysis, (2) methanolysis in methanolic 72% H₂SO₄ with pretreatment for 3 h with aq. 72% H₂SO₄, (3) colorimetric detn. of galacturonic acid, and (4) gas liq. chromatog. of the alditol acetates of the neutral sugars released by **acid hydrolysis** under

L4 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:237642 CAPLUS

DOCUMENT NUMBER: 131:43708

TITLE: Ferulic acid and diferulic acids as components of **sugar-beet** pectins and maize bran heteroxylans

AUTHOR(S): Saulnier, Luc; Thibault, Jean-Francois

CORPORATE SOURCE: Unite de Recherche sur les Polysaccharides, leurs Organisations et leurs Interactions, Institut National de la Recherche Agronomique, Nantes, 44316, Fr.

SOURCE: Journal of the Science of Food and Agriculture (1999), 79(3), 396-402

CODEN: JSFAAE; ISSN: 0022-5142

PUBLISHER: John Wiley & Sons Ltd.

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review with 41 refs. with emphasis on recent research by the authors and their colleagues. Enzymic **hydrolysis** of **sugar-beet** pulp, and subsequent isolation of feruloylated oligosaccharides, has shown that ferulic acid groups are ester-linked mainly on O-2 of **arabinose** residues and on O-6 of galactose residues in the pectin side-chains. After sapon. of **sugar-beet** pulp enzymic digests, dehydrodiferulic acids (0.14%, wt./wt.) have also been identified and characterized as 8-5', 5-5', 8-8' and 8-0-4' isomers, suggesting that covalent crosslinking of pectic polysaccharides through diferulic bridges occurs in **sugar-beet** pulp. Feruloylated oligosaccharides from the side-chains of heteroxylans have been isolated from maize bran by **acid hydrolysis**. Ferulic acid is esterified on O-5 of arabinofuranose residues; 8-8', 8-5', 8-0-4' and 5-5' coupled dimers, which represent 2.5% (wt./wt.) of the bran, have also been detected. It has been calcd. that, in the cell wall, each heteroxylan macro-mol. bore .apprx.75 esterified ferulic acid groups and could be cross-linked through .apprx.30 diferulic bridges. This result suggests a high degree of crosslinking of heteroxylans chains through ferulic acid in maize bran cell walls.

REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1993:250852 CAPLUS

DOCUMENT NUMBER: 118:250852

TITLE: Studies on the simultaneous determination of acidic and neutral sugars of plant cell wall materials by HPLC of their methyl glycosides after combined methanolysis and enzymic prehydrolysis

AUTHOR(S): Quemener, Bernard; Lahaye, Marc; Thibault, Jean Francois

CORPORATE SOURCE: Lab. Biochim. Technol. Glucides, Inst. Natl. Rech. Agron., Nantes, 44026, Fr.

SOURCE: Carbohydrate Polymers (1993), 20(2), 87-94
CODEN: CAPOD8; ISSN: 0144-8617

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A method which involves enzymic **hydrolysis** followed by methanolysis and sepn. of the Me glycosides by HPLC was applied to complex polysaccharides from 3 fiber preps. (pea hulls, **sugar-beet** pulp, and **wheat** bran). The results were compared to those obtained by (1) methanolysis without enzymic prehydrolysis, (2) gas chromatog. of the alditol acetates of the neutral sugars released by **acid hydrolysis**, and (3) colorimetric detn. of the uronic acids. Methanolysis alone allows the estn. of noncellulosic polysaccharides (pectins and hemicelluloses), whereas combined methanolysis and enzyme prehydrolysis also leads to the detn. of

various conditions.